Art Unit 2502

MAILED

Paper No. 8

Appeal No. 93-1732

APR 25 1994

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ON BRIEF

PAT.&T.M. OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

UNITED STATES PATENT AND TRADEMARK OFFICE

Ex parte Ole K. Nilssen

Application for Patent filed July 22, 1991, Serial No. 07/734,188; which is a continuation-in-part of application Serial No. 07/643,023, filed January 18, 1991, now abandoned; which is a continuation-in-part of application Serial No. 06/787,692, filed October 15, 1985, now abandoned; which is a continuation of application Serial No. 06/644,155, filed August 27, 1984, now abandoned; which is a continuation of application Serial No. 06;555,426, filed November 23, 1983, now abandoned; which is a continuation of application Serial No. 06/178,107, filed August 14, 1980, now abandoned. Electronic Ballast With Leakage Transformer.

Ole K. Nilssen, pro se.

Primary Examiner - Robert J. Pascal
Examiner - Ali Neyzari

Before Hairston, Krass and Cardillo, Administrative Patent Judges.

Cardillo, Administrative Patent Judge.

This is a decision by Examiners-in-Chief[1] designated in accordance with 35 U.S.C. § 134 from the examiner's rejection of

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[1]In accordance with the notice in 1156 OG 32, Nov. 9, 1993, the Examiners-in-Chief have been directed to use the title Administrative Patent Judge.

claims 1 to 14. Claims 15 to 17 have been indicated to be drawn to allowable subject matter while claims 18 and 19, the only other claims remaining in this application, have been allowed.

The invention relates to an electronic ballast, the nature of which is apparent from a reading of the appealed claims which we reproduce in an appendix to this decision as they have been set forth in the appendix attached to appellant's brief.

The reference of record relied upon by the examiner is:

Sridharan et al. (Sridharan) 5,019,938 May 28, 1991

Claims 1 to 14 stand rejected under 35 U.S.C. § 103. As evidence of obviousness, the examiner offers Sridharan.

Rather than repeat the arguments of the appellant or the examiner, we make reference to the brief and the answer for the details thereof.

OPINION

After a careful review of the record before us, we find that the evidence and attendant rationale of obviousness offered by the examiner fails to convince us that the artisan would have found the subject matter of appealed claims 1 to 14 to have been fairly and reasonably suggested by something we can attribute to the prior art instead of appellant's disclosure.

The examiner is apparently aware that Sridharan does not

disclose that either one of his two suggested transformers should be "a leakage transformer" like the one specified in claims 7 to 14 (but not in claims 1 and 3 to 6) and at least suggested by claim 2. The examiner dismisses this difference as a mere "matter of design consideration," which we take to be a "design choice" argument.

In his description of the prior art (specification, page 1), appellant calls attention to the Ghiringelli patent (4,100,476, issued July 11, 1978) which (see, e.g., col. 2 lines 36-42) clearly suggests that the use of a leakage transformer obviates the need for a separate ballast coil in addition to the leakage transformer secondary coil which itself provides adequate leakage inductance to act as a ballast (col. 5, lines 47-51). In fact, appellant could have referenced his own US patent (Nilssen, 4,626,747, issued December 2, 1986) on this very point (in terms of a current limiting transformer as described at col. 3, lines 28-38). Thus, both types of transformers were well known and the advantages and disadvantages of each were apparent. "Accordingly the selection of one or the other for any particular installation is merely a matter of choice or engineering design." In re Heinrich, 268 F.2d 753, 122 USPQ 388, 390 (CCPA 1959). In any event, it is clear that the artisan would have expected to have been able to obviate the need for a separate ballast coil

along with the secondary coil of the transformer by the simple and well known expedient of using a "leakage transformer."

However, even though we can find nothing of patentable significance in the substitution of a well known "leakage transformer" for a standard transformer, such as one of those of Sridharan, we do not view the examiner's further dismissal of the claimed orientation of the core of this transformer with respect to the housing longitudinal axis as another "design consideration" to be warranted under the circumstances. Here, the claimed orientation is at the heart of appellant's disclosed solution to the power dissipation problem noted on page 17 of the specification. This orientation is, thus, critical. The situation is, therefore, not the same as in In re Kuhle, 526 F.2d 553, 188 USPQ 7,9 (CCPA 1975) because use of the claimed orientation solves a stated problem. Accordingly, the claimed orientation of the transformer core cannot be simply dismissed as a design consideration as the examiner attempts; instead, the examiner must explain why the artisan would have been led to the claimed transformer core orientation apart from appellant's disclosure thereof. This is particularly the case here since Sridharan prefers to use a nonconductive housing made of plastic (see col. 3, lines 42-44) which would not have been responsive to any transformer fields no matter what the orientation of the transformer core.

Since the examiner has failed to demonstrate what it is in the applied reference and/or common knowledge in the art that would have led the artisan to modify this reference along the lines claimed, the rejection of claims 1 to 14 thereover must be reversed. Consequently, the decision of the examiner is reversed.

REVERSED

Kenneth W. Hairston)
Administrative Patent Judge)
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Errol A. Krass) BOARD OF PATENT
Administrative Patent Judge) APPEALS
) AND
) INTERFERENCES
)
Raymond F. Cardillo, Jr.)
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APPENDIX

CLAIMS on Appeal in Serial No. 07/734,188

1. An electronic ballast comprising:

a ballast housing means having a shape substantially like that of a parallelepiped; the housing having: (i) a mostly flat rectangular bottom wall, (ii) a mostly flat rectangular top wall, the top wall being substantially parallel with the bottom wall, (iii) a mostly flat first side wall, (iv) a mostly flat second side wall, the second side wall being substantially parallel with the first side wall, (v) a mostly flat first end wall, (vi) a mostly flat second end wall, and (vii) a longitudinal axis; the rectangular bottom wall and the rectangular top wall each having a pair of long sides and a pair of short sides; the length of each of the long sides being substantially longer than the length of each of the short sides; the long sides of the bottom wall being parallel with the longitudinal axis;

electronic circuitry; and

a transformer having a ferro-magnetic core; the ferro-magnetic core being characterized as having a main plane; the main plane being parallel with the direction of the magnetic flux in the ferro-magnetic core;

the electronic circuitry and the transformer being mounted within the ballast housing; the transformer being positioned such that the main plane of the ferro-magnetic core is substantially perpendicular to the longitudinal axis.

2. The ballast of claim 1 wherein the transformer generates a substantial amount of magnetic leakage flux.

3. The ballast of claim 1 where at least one of the walls is electrically conductive.

4. The ballast of claim 1 wherein at least one of the walls is made of steel.

5. The ballast of claim 1 wherein the electronic circuitry is characterized by including an inverter connected with a source of DC voltage and operative to supply an AC voltage.

6. The ballast of claim 1 wherein the ballast housing is made of ferro-magnetic material.

7. An electronic ballast comprising:

a ballast housing means having an outer surface shaped like a cylinder of a certain length and with a substantially rectangular cross-section; the length being substantially longer than the largest dimension of its rectangular cross-section; the housing means having: (i) a first rectangular relatively wide wall; (ii) a second rectangular relatively wide wall, this second relatively wide wall being approximately of the same size and shape as the size and shape of the first rectangular relatively wide wall, as well as being substantially parallel with the second rectangular relatively wide wall; (iii) a first rectangular relatively narrow wall; (iv) a second rectangular relatively narrow wall, this second relatively narrow wall being approximately of the same size and shape as the size and shape of the first rectangular relatively narrow wall, as well as being substantially parallel to the first rectangular relatively narrow wall; (v) a cylindrical axis disposed parallel with all the walls of the housing means;

electronic circuitry; and

a leakage transformer having a ferro-magnetic core; the ferro-magnetic core being characterized as having a main plane; the main plane being parallel with the direction of the magnetic flux lines in the ferro-magnetic core; the leakage transformer generating a substantial amount of magnetic leakage flux;

the electronic circuitry and the leakage transformer being mounted within the housing means; the leakage transformer being positioned such that the main plane of its ferro-magnetic core is substantially perpendicular to the plane of the first rectangular relatively wide wall.

8. The electronic ballast of claim 7 wherein the main plane of the ferro-magnetic core is disposed perpendicularly to the cylindrical axis.

9. The electronic ballast of claim 7 wherein at least parts of the walls are electrically conductive.

10. The electronic ballast of claim 9 wherein the ballast housing means includes a substantial amount of steel.

11. The electronic ballast of claim 7 wherein at least part of the walls is made of metal.

12. An electronic ballast operative to supply lamp power to a gas discharge lamp and comprising:

a ballast housing means having an outer surface shaped like a cylinder; the cylinder having a length, a cylindrical axis, and a cross-section; the length being substantially longer than the largest dimension of the cross-section;

electronic circuitry; and

a leakage transformer having a ferro-magnetic core; the ferro-magnetic core being characterized as having a main plane; the main plane being parallel with the direction of the magnetic flux lines in the ferro-magnetic core; the leakage transformer having a primary winding and a secondary winding, and being operative to transfer at least part of the lamp power from the primary winding to the secondary winding;

the electronic circuitry and the leakage transformer being mounted within the housing means; the leakage transformer being positioned such that the main plane of its ferro-magnetic core is substantially perpendicular to the cylindrical axis.

13. The electronic ballast of claim 12 wherein the main plane of the leakage transformer is substantially parallel with the direction of most of the magnetic flux lines in the ferro-magnetic core.

14. The electronic ballast of claim 12 wherein the lamp power is supplied to the gas discharge lamp in the form of a high-frequency current; the fundamental frequency of the high-frequency current being substantially higher than that of the power line voltage on an ordinary electric utility power line.